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OF

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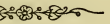
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THE INFLUENCE OF WHOLESOME DRINK.



THREE quarters of that staunch body which you bring with you to the task of perusing these pages, my firmly-knit friend, notwithstanding substantial appearances, are nothing but thin WATER. If without your clothes you weigh 150 pounds, 113 of those pounds are mere liquid, which could be poured through the spout of a teapot, or even the channel of a tobacco pipe. Are you surprised to find yourself of so watery a nature? If you are so, you have no good ground for your wonder, for I can tell you that liquid has plenty of work to perform for your good.

You have already learned some of the important things which water has to do for you (*see* page 23 of "Use of Pure Water," and page 10 of "Value of Good Food)." More of a similar nature remains to be told, but this must not be dwelt upon now, because other matters require the attention. Thus much only, for the present, you must understand. Water is continually being drained away out of the supply-pipes of your body, and therefore requires to be as constantly restored to them, unless the blood is to be allowed to get so thick that it can no longer flow freely through their channels. The Great Architect of your body purposed that this should never happen, because if it did, all the powers of your frame, which are sustained by the

blood-movement, would suffer and flag. Therefore He has contrived a plan to prevent such thickening of the life-stream.

So soon as your blood has begun to grow thick and to flow slowly, it moves unwillingly and lazily through the structures of your throat, as well as through all other parts. The thick lazily moving blood there causes that unpleasant feeling which you call THIRST; a feeling which is so disagreeable, that the instant you are conscious of it, you seek to get rid of it by swallowing DRINK.

When you drink water to quench your thirst, the thin liquid goes down into your digesting-bag, and is then directly sucked up into the supply-pipes which run about all over its inside. There it *thins* the thickened blood, goes with it to the heart, and is thence pumped out through the channels of supply, taking its part in all the operations of life, diluting and changing here, and carrying and cleansing everywhere. There are various outlets through which the waste is poured away, but the principal of these lie upon the skin and in the kidneys. Before it is poured away, however, it actually forms part and parcel of all the structures of your frame; is for the time a portion of your life! It runs not merely through the digesting-canal of your body to the outlets for waste, but actually through the blood, and heart, and brain. Hence you see *good drink* may carry health, and vigor, and activity to all these internal and delicate parts; but *bad drink* may at once introduce mischief there, and danger, and disease.

The best possible drink is, of course, that which has the most power to fulfil the main office for which it is required; that is, the keeping the blood duly thin, for easy and ready flow. In its capability to do this, Nature's own liquid, PURE WATER, stands

altogether alone. No other fluid is at once so incorruptibly impartial, and so generously free; so ready to dissolve, so willing to carry, and so frank to return what is entrusted to it. When healthy people drink freely of pure water, the solid substance of their frames is actually washed and worn away, in consequence, more quickly; but this is directly made up to them by their getting stronger appetites, and eating more solid food. The food replaces the wear, and they do not waste, although their structure is more quickly consumed. The wear and tear *goes to work*, instead of *to waste*.

People do not, however, drink only pure water, perfect as that liquid is for the performance of the service for which it is swallowed. An immense amount of ingenuity and industry is spent in preparing beverages which are commonly preferred to plain water, because they have very agreeable flavours, and because it is believed that they are nourishing as well as thirst-quenching. These agreeable artificial beverages are principally prepared by the agency of boiling water, and the leaves and seeds of certain vegetables, which are cultivated for the purpose very extensively in various quarters of the globe.

Of these vegetable-furnished beverages, some are swallowed as soon as they have been prepared, and even while the warmth of the water is in a certain degree retained. Others are kept for some time, and allowed to pass into a condition of half decay, before they are used. The former class consist of the Tea, Coffee, and Cocoa, so familiarly known in most English households, besides being employed daily in a greater or less degree, by more than seven hundred millions of human beings.

Few persons in the British isles undervalue the fragrant drink, which pours forth its pleasant leafy

smell upon almost every table in the United Kingdom, from the cottage to the palace, once or twice in the day. British tea-drinkers are not, however, aware how enormous is the quantity of the fragrant leaf that is required every year for their supply, although only distributed to them by small spoonfuls. Scott Russell's monster steam-ship, in process of construction at Millwall, is considerably longer than the largest cathedral in England, and when finished would be able at once to waft across the sea an army of ten thousand men, with all their baggage, arms, and ammunition; or it would carry a compact burthen of twenty-five thousand tons. That monster ship, six times bigger than the largest line-of-battle ship in the Queen's service, would scarcely be able to bring to England, in one freight, the tea that is consumed in the island in a single year. Every twelve months, sixty millions of pounds of tea are made into drink in the British isles, besides thirty-five millions of pounds of coffee, and four millions of pounds of cocoa, articles which are, as will be presently seen, near kindred of the fragrant leaf, although seemingly of so different a nature.

Upon the hill-sides, in the remote land of China, there are thousands of acres of gardens filled with rows of plants, that look from a distance something like large gooseberry bushes, but which upon closer inspection more nearly resemble stunted japonica shrubs. Almost as soon as these shrubs have fully put forth their young leaves, men and women come round, and strip their twigs and branches bare. They then carry away the leaves, and dry them with much care, partly by exposure to the sunshine and air, and partly by the heat of fires of charcoal, until two-thirds of their weight have been steamed away. When the leaves are dried quickly, the shrunk and

crisped foliage is of a green colour. When they are left moist for a longer period, and are dried more slowly, they turn of a dull black hue. In either case, the crisped and curled leaves form the tea, portions of which are sent over the sea for the use of English tea-tables. The ground which is devoted to the growth of the tea plant, in China, would, if all joined together, form a farm nearly as large as Wales! Three millions and a half of acres are there covered with tea-bushes; and the entire produce of these acres in tea, is fifty times as large as the amount which is consumed in England. Fifty monster ships, like the one building at Millwall, would not hold therefore the tea produce of a single year. Of tea, and of its allies, coffee and cocoa, the earth yields yearly not less than *three thousand millions of pounds;* a quantity which it would take a grocer a hundred years to weigh out, if he worked at the rate of a pound every second. More than half the inhabitants of the earth are daily engaged in the occupation of consuming this vast amount.

Although these favourite beverages are now so extensively used, this has not been very long the case. In the year 1664 the East India Company made a present to the Queen of England of two pounds of tea, considering it a very rare and choice gift. The Chinese themselves do not seem to have drunk tea generally before the seventh century. Cocoa was brought from Mexico to Spain in the middle of the 16th century for the first time; and coffee was not seen in London until the 17th century. Hence it appears that these drinks are at least not actually *necessary* to human beings. The forefathers of the present generation did without them for centuries.

When articles, which were scarcely known to be in existence three centuries ago, have so rapidly

spread themselves through the world, that they are now viewed almost in the light of daily requisites by the larger half of mankind, it may very safely be concluded that there is some strong reason for the result. The reason may be a good one, or a bad one; the articles may be found to be of great service when employed, or they may be merely felt to produce agreeable feelings not necessarily serviceable. Is it possible to determine in which of these predicaments, tea and its allies, stand? As a first step towards the formation of an opinion in this matter, it will be quite worth any interested person's while to satisfy himself by a very easy experiment that there is something in tea, which careless notice and common use would never discover. Let him simply rub a teaspoonful of dry tea leaves to powder, and place it in a flat watch-glass, standing on the hot hob of a fire-place, a piece of stiff white paper being twisted up into the form of a sugar-loaf, and covered over the watch-glass and powdered tea. So soon as the tea has become very hot, a white steam-like vapour will rise from it, and be entangled in the paper, and if the paper cap be removed after a few minutes and be unfolded, its surface will be found to be sprinkled with a white glittering powder, something like pounded glass, or very fine salt. The powder is the vapour, turned into the powdery state, after it has been entangled by the paper. There is so much of this white powder in tea, that three grains can be procured from half an ounce of the leaves. Fifty pounds of good tea would furnish a pound of the white powder.

Having found out the existence of this white powder, hidden away in the black or green leaves of tea, the next thing we have to do is to discover, if possible, what its nature and character are. The chemists have

given it a learned name—*that* will not help us much in our present proceedings, still it may be convenient to know the curious substance by the title it bears among learned men. The chemical name of the white powder is THEINE. This means nothing more than the *white powder contained in* TEA. There is another really helpful consideration, however, which naturally occurs while we look at this substance. "Where did the white powder come from?" How did it get into the tea-leaf?

The white powder of tea was formed in the leaf, when that leaf was stretched out in the Chinese sunshine, as the plant grew on the side of the warm Chinese hills. It was made out of the food which the plant sucked in from its native soil and its native winds, in the little chambers of its living structure, at a great expense of wise effort and skill. No human artist can make a grain of that white powder, if he spends a life-time in the trial. In the little tea-leaf, as it grows on its sunshiny hill-sides, the most subtle and cunning powers are set to work by THE WISDOM which knows everything, and by THE HAND which holds and directs all things in man's wonderful world. The result is, that out of coarse earth, and thin vapours, and fostering sunshine, the ingredients of the white powder are gathered together, and mixed, each in its proper proportions, and in the right manner, in the hidden recesses of the growing plant. GOD, in His own sublime language, says to the Chinese soil, and atmosphere, and sunshine—"*Let the white powder of the tea plant be*"—and there it is.

In a world that is so overflowing with perfect contrivance as this one, which serves as man's dwelling place, it is not at all likely that this curious white powder is made by the tea plant in such abundance—twenty-five thousand tons of it at least turned out on

the Chinese hills every year, and scattered thence to the four corners of the world—without having some very good work appointed it to do. You will not wonder, therefore, that inquiring men, who know that all these thousands of tons get mixed in the ordinary course of ordered events with the flesh and blood of human bodies, should be very curious to find out what they are capable of doing there. Another very surprising fact also tends greatly to strengthen this curiosity. The coffee tree grows not in China, but in Ceylon, in Arabia, and in the West Indies. The Cocoa tree flourishes on the other side of the American continent, in Mexico and Peru. Yet the coffee and cocoa plants make out of the East and West Indian, the Arabian, and the South American soils, vapours, and sunshine, *exactly the same kind of white powder* that the tea plant manufactures on the Chinese hills! Plants so unlike in external appearance, and living in districts so remote from each other, first get to be used in similar ways in the preparation of beverages for millions of the human race. Then curious and prying inquirers find that there is one principle present in all these beverage-yielding plants. The common-sense inference is plain. It is most likely that it is *this one substance present in all* the three different plants, which has led to their being employed so generally in the preparation of drink.

The experiments which the chemists have tried with this white powder, with a view to the discovery of the action it may be able to exert upon living bodies when taken into them, appear to prove simply this. When swallowed in proper quantities it has a most wonderful *sustaining* power. It seems as if it enabled food which is taken with it to go one fourth part as far again in supporting the strength of the body, as it would without the addition; and if it does this, it is certainly not

because it adds *an equal amount of bulk* to the food, for a trifling pinch of *three or four grains* of the powder, as much as could be laid on a silver four-penny piece, is enough for the purpose during one day. If a healthy man has half a pound of bread taken from his daily meals, and three grains of the white powder of tea added in its stead, his body does not miss the bread. The white salt of tea, coffee, and cocoa, seems to possess the power of relieving the body from the effects of wear and waste, and so of decreasing its requirement of food.

This extraordinary substance also produces another very remarkable effect on the living body, when it is swallowed in these small quantities. It CHEERS AND ENLIVENS, at the same time that it aids in supporting the bulk and strength of the frame. The chemist finds, when he examines its precise composition, that it is even *more adapted to supply the substance which the* NERVES AND BRAIN lose by wear and tear, than to diminish the loss the flesh undergoes from the same cause. The white powdery ingredient of coffee and tea is most probably a rich and strong *nerve-food*, provided for the support of the nervous structure and brain, rather than for the nourishment of the flesh; it is NERVE-MAKING SUBSTANCE rather than *flesh-making substance;* and it exerts some mysterious and very extraordinary influence of lessening the waste of wear and tear in the structures of the living frame, without stopping their useful activity in the same degree.

In order that the nature and suspected action of this white powder of tea, coffee, and cocoa may be kept fairly in the mind, it may be well, instead of speaking of it by its learned name, to call it the NERVE-FOOD INGREDIENT of these beverages. Some further remark might very well be made touch-

ing the probable reason why these beverages, thus rich in a nerve-strengthening food, should have come into such general use in modern times, although scarcely employed in remote ages. But it may, on the whole, be best merely to say, that it is quite in accordance with the general management of the Gracious Providence who rules over man's world, that the additional wear and tear of nerve and brain, which of necessity follows from the increase of numbers in the human race, and from the advance of the arts and civilization, should have had some counteracting compensation provided for its relief.

The best foods and the most valuable medicines are all as injurious as poisons, when they are taken in great excess. Every blessing which God has furnished to man is intended to be *used*, and not to be *abused*. Men are expected to learn how to employ them well, and how to avoid applying them improperly. The nerve-food ingredient of tea and coffee is no exception to this universal rule. When three or four grains of it are taken in the day, it refreshes and sustains; but if as much as ten grains are taken in the same time, it makes the blood flow with great rapidity through the supply-pipes of the body, and produces an uneasy feeling in the head, continued watchfulness, and trembling in the limbs. These effects, however, it must be remembered, are the results not of the use, but of the abuse of the substance. The Chinese account for the sleep-banishing power of tea, when taken in excess, in this way—They say that many centuries ago there lived in the Flowery Land a holy man, who desired to spend his entire life in watching and prayer, but who was constantly catching himself napping in spite of every effort to keep himself awake. Getting at last to be very angry with the eyelids, which would not keep

open, he one day determined that he would settle the business effectually by cutting them off. He put his shrewd plan into effect, and cast the offending eyelids aside upon the ground. The eyelids, however, directly took root, and grew up into two fine plants, which bore leaves, having the form of eyelids, and being fringed with hairs, like eyelashes, round their borders. The plants proved to be tea-plants, and the leaves of the descendants of those plants now make amends for the offences of their first parents, the holy man's eyelids, by furnishing a drink which keeps sleepy people awake.

Tea contains several other ingredients besides the *nerve-food* just now described. It has in it something which gives it the very fragrant smell, and delicate agreeable flavour, tea drinkers learn to value so highly. This fragrant principle, however, does not exist in the fresh tea-leaf. It is produced by a new sorting and arranging of the ingredients held in the fresh leaf, during the process of drying and roasting. The more carefully the tea is dried, the more delicious its taste and scent become. But tea has also an astringent matter in it, something like the astringency of the mouth-drawing sloe-leaf;—this is not very easily dissolved from it by boiling water. It is only taken up from it after it has remained in hot water for a very long time. Tea contains too a large amount of a true flesh-making substance, of a nature very closely resembling that of the meal of beans or peas. This is not at all dissolved in boiling water. It has been related that when the Queen of England first received her present of the precious tea, the royal cook, not quite understanding what ought to be done with it, boiled it well, and then dished it up on the dinner table, in the same way as spinach and other vegetables. If it be true that the Queen's cook did treat the

tea in this way, the plan was not altogether so absurd as it seems. Tea leaves, well cooked, and eaten after this fashion, would prove quite as wholesome and nutritious as beans and peas, the excess of the more active ingredients being removed by the boiling water, and the nourishing meal being principally left behind. Not more than a fourth part of this valuable production, tea, is really unnourishing wood and ash.

When a beverage is prepared from tea, if it be the object to get their finest qualities from the leaves, without regard to expense, the best method of proceeding is to use a large proportion of tea, pouring on as much boiling water at once as will make up the quantity required, and taking it off again after the tea has been standing about ten minutes. The water then dissolves principally the nerve-food ingredient and fragrant flavours, and leaves behind the coarser meal and astringent parts. When, on the other hand, the object is to get all the *nourishment* out of the tea which it can be made to yield, about a quarter of a small teaspoonful of carbonate of soda should be put into the water with the leaves, and the whole should be allowed to stand, covered up closely in a warm place, for a longer time. By this management, the nutritious meal and other coarser ingredients are partially dissolved into the water, as well as the finer parts. The addition of sugar and milk to the beverage of course increases its directly nourishing powers.

Half an ounce of good tea contains about three grains of the active *nerve-food* ingredient. This therefore is quite as much as any individual should use for the preparation of beverage for a single day. It is also somewhat important how even this moderate quantity is employed. Much of the bad effect which has been

attributed to *tea*, really has been due to the *way in which the tea has been drunk*, rather than to the *direct influence* of the leaf. People commonly swallow *many cups* of it in rapid succession, and pour it down their throats *as hot* as they can bear it. This is all very unreasonable and wrong. As a rule, never more than a *couple of small cups* of tea, made from about *two drachms* of the leaf, should be taken at one time, and even these should not be drunk until the beverage is so far cooled as to cease to give an impression of *actual heat* to the palate and stomach. The stomach itself makes things warm that are submitted to its influence; there can, therefore, be no harm in *warmth*. Warm things are not weakening to the stomach, as some people conceive. It is only *hot things* that are weakening, because they force and over-goad the activity of the organ, and then leave it weary and exhausted from the forced work it has been made to perform.

COFFEE is the berry of an evergreen tree, which grows to a height of about twenty feet, and which is largely cultivated in Arabia, Ceylon, Jamaica, and the Brazils. The berry is plucked when sufficiently ripe, and carefully stored away. It is principally composed of a sort of hard paste or meal, similar to that of the almond or bean, which is destined by nature to form the earliest nourishment of the young germ contained in the seed. When this meal is exposed to strong heat, it is partly turned into the fragrant flavour, which is familiar to all drinkers of coffee. Hence coffee is always roasted before it is employed in the preparation of beverage. The process is best accomplished by placing the berries in a hollow cylinder of iron, kept turning rapidly round over a clear fire until they put on a light chestnut colour, when they require to be cooled quickly by tossing them up

into the air. Roasted coffee contains, besides its fragrance, the white *nerve-food* already alluded to in speaking of tea, a remnant of the nutritious meal, unaltered by the roasting, and a slightly astringent matter. Its nature is, therefore, singularly like to that of tea, and its action on the living frame is precisely the same. When drunk in moderation, coffee supports and refreshes the body, and makes the food consumed with it go further than it otherwise would. Coffee is, upon the whole, less astringent than tea; it also contains only half the quantity that tea has, weight for weight, of the active *nerve-food.* Hence it can be taken stronger than tea, and so has more of the other nourishing ingredients in any given bulk. A cup of strong coffee generally holds about the same quantity of the active nerve-food as a weak cup of tea.

As with tea, so with coffee; it requires to be prepared differently, accordingly as the object is, to get from it the finest flavour, or the greatest amount of nourishment. The most delicious coffee may be made by using a tin vessel, called a Percolator, having a false bottom at mid-height, drilled full of fine holes, and a spout coming off from beneath the false bottom. Finely-ground coffee is to be pressed and beaten down firmly upon the false bottom, and then boiling water is to be poured over it through a kind of coarse cullender, so arranged as to break its descent into a boiling shower. The hot water thus gently rained down on the coffee then drains gradually through it, carrying all the finer parts and flavours with it into the vessel beneath, but leaving behind the coarser matters. For the convenience of consumers, coffee is now commonly removed from the roaster at once into a mill driven by steam, and is there ground while still hot. It is then pressed out from the mill directly into tin cases prepared to receive it, these being immedi-

ately closed very carefully. By these means the coffee powder is sent out, ready for use, with all its most excellent qualities clinging about it. Three drachms of ground coffee of this quality are abundantly sufficient to furnish two small cups of a most delicious beverage.

When quantity of nourishment, rather than fineness of flavour, is the thing desired, the ground coffee should be placed in a clean dry pot standing over the fire, and be kept there until thoroughly hot, being stirred constantly, so that it may not burn. About five grains of carbonate of soda should then be added for each ounce of coffee, and boiling water be poured on, the whole being *closely covered up* and allowed to stand near the fire, without simmering, for some time. When about to be used, it should either be gently poured off into cups, without shaking it, or it should be strained through a linen cloth into another pot. An ounce of coffee employed in this way is sufficient for the preparation of two pints of strong nutritious drink.

A small evergreen tree grows in the West Indies, Mexico, and Peru, which bears a large fruit something like a melon. In this fruit there are a great number of seeds resembling beans. When the fruit is ripe, it is plucked from the tree and split open, and the seeds are picked out and dried in the sun. After these beans have been roasted in an iron cylinder, in the same manner as coffee, they, too, become bitter and fragrant, and are turned into what is known as COCOA. To form *cocoa nibs*, the husk of the roasted bean is stripped off, and the rest is broken up into coarse fragments. In the preparation of *Chocolate*, the cocoa nibs are ground up and turned into a sort of paste, by admixture with sugar and spices. The unhusked bean is also crushed between heavy rollers, and made

into a coarser kind of paste, with starch and sugar, and is then sold in cakes.

Cocoa contains about the same quantity of the *nerve-food* ingredient as tea, and besides this it also contains a nutritious meal. More than half its weight is, however, made up of a *rich oily substance*, nearly resembling *butter* in its nature. When cocoa is prepared by stirring the paste up in boiling water, all these several ingredients are present in the drink. It is then as nourishing as the very strongest kind of vegetable food, and scarcely inferior to milk itself. It indeed is richer than milk in one particular; it contains twice as much *fuel substance*, or *butter*, and if the *nerve-food* ingredient be taken into the reckoning, it is scarcely inferior in supporting power. On account of its richness it often disagrees with persons of weak digestion, unless it be prepared in a lighter way, that is, by simply boiling the cocoa nibs in water, and mixing the beverage produced with enough milk to reduce its great excess of oily principle. Cocoa serves at once as an agreeable and refreshing beverage, and as a highly nutritious food for healthy and hard-working people. It has in itself the excellencies of milk and tea combined.

The beverages which are also prepared by soaking the seeds of vegetables in hot water, but which are not then drunk until a further change of the nature of partial decay has been produced in them, are of a very unlike character to those which have been hitherto under consideration. Although there are several different kinds of this class, they all stand together under the family name of Beer. Now this much must at once be said for these beverages. There is in all of them both *flesh-making substance* and *fuel-substance*. The first gives to the liquor its *body*, and the second confers its *sweetness*. The

barley-corn contains the same kinds of ingredients as the wheat-grain, and by the operation of malting the starch is chiefly turned into sugar. If *a gallon* of strong ale be boiled over a fire, until all the more watery parts are steamed away, there will be found at the bottom of the vessel rather more than a quarter of a pound of dry remainder. This is *flesh-making substance*, and *sugar*, which were originally taken out of the malt. If a gallon of milk were treated in the same way, there would be found nearly a pound of similar dry substance. Strong beer therefore contains about one-third part as much nourishment as an equal quantity of milk. When beer is drunk, its watery parts are at once sucked from the digesting-bag into the supply-pipes, to be poured through the body with the blood; this is how beer quenches the thirst. The thicker portions are pushed on through the sluice-gate of the stomach in a digesting state, and are, in fact, treated in every respect as ordinary food.

Mixed with the thinner parts of beer, which are thus sucked into the supply-pipes, there is, however, an ingredient which is not as *unquestionably* nourishing as the thicker principles, and which certainly is not as good a thirst-quencher and dissolver as water. Flesh-making substance and fuel-substance, either in the state of starch or sugar, may be kept unchanged any long period of time if thoroughly dry, and shut up from the air. When they are moist and exposed to the air, they directly begin to spoil and decay. In beer, these substances are mixed with a large quantity of water, and are exposed to the air, at least during the brewing. Hence, in beer, both are found in a spoiled and decaying state. In this case, the process of decay is called *fermentation*, or "puffing up," because the vapours produced by the decay, froth the

sticky liquid in which they are set free. The yeast which rises to the surface of fermenting beer, is decaying and spoiling flesh-making substance. The spoiled fuel-substance (sugar) froths and bubbles away into the air as vapour.

But the fuel-substance (sugar) does not, as it decays, bubble away into vapour all at one leap. It makes a halt for a little while in a half decayed state, and in this half decayed state it has a very spiteful and fiery nature. In that fiery and half decayed condition it forms what is known as ARDENT, or *burning* SPIRIT. Beer always has some, as yet, undecayed and unchanged sugar remaining in it, when it is drunk, but it also always has some half decayed sugar or spirit, and bubbling vapours formed by the progress of decay. It is these ingredients of the beer which give it the fresh and warm qualities for which, as a beverage, it is chiefly esteemed.

The spirituous ingredient of fermented liquors is directly sucked with the water out of the stomach into the supply-pipes of the body, and poured everywhere through them. There is no doubt concerning that fact. Animals have been killed and examined a few minutes after fermented liquor had been placed in their digesting bags, and the ardent spirit has been found in great quantity in their supply-pipes, their hearts, and their nerve-marrows and brains.

But some doubt does yet remain as to what the exact nature of the influence is which the ARDENT SPIRIT exerts, when it has been introduced into these inner recesses of the living body *in small quantity*, and as much *diluted* by admixture with water as it is in most beers. Some persons, whose opinions cannot be held to be without weight, believe that diluted spirit is capable of aiding the nourishment of the body—of acting as a sort of food. Others of equal

authority are convinced that it can do nothing of the kind.

But however the matter may appear regarding the power of ARDENT SPIRIT to nourish, no doubt can be entertained of the fact, that it certainly is *not* a *necessary food.* There is actually nothing of a material kind in the bodies of human creatures, which is not also present in the frames of the irrational animals. The same kind of structures have to be nourished, and the same kind of bodily powers to be supported in oxen and sheep as in men. But oxen and sheep fatten, and grow strong, and are maintained in health without ever touching so much as a single drop of ardent spirit. There are hundreds of men too who preserve their vigour and health up to great ages, without even tasting fermented liquors.

It must also be admitted that there are great numbers of people who use fermented liquors *in moderation* every day, of whom the same can be said. But it is to be feared that those who are safely *moderate* in their employment of these treacherous agents, are a really small band compared with those who allow themselves to be continually within the reach of unquestionable danger. In the United Kingdoms of Great Britain and Ireland, with a population amounting to rather less than 30 millions of individuals, when the numbers were last reckoned, there are yearly 61 millions of gallons of ardent spirit consumed as beer; 30 millions of gallons as spirit; and nearly two millions of gallons as wine.

There is, yet again, another very important point of view from which the habitual moderate use of fermented liquors must be contemplated. A pint of strong beer is in itself no very great thing. Many people swallow it almost at a single draught, and in less than a minute The trifling act, however, entails

one serious consequence when it is performed day by day. A pint of strong beer cannot be bought at a less cost than threepence. Threepence a day, at the end of a year, amounts to £4 11*s.* 3*d.* If it be only laid by and made no use of, at the end of sixty years, it amounts, under the same circumstances, to £273. If employed, instead of being laid by, it might be improved at the end of sixty years into a large fortune. Hundreds of men have made thousands of pounds with smaller means.

Money, of course, is of no great value in itself; it is only of value when applied to good service. But herein lies the gist of the matter. Money always can be made good use of. If a young man at the age of 18 begin to lay by threepence every day, instead of buying a pint of beer with it, and continue to do the same thing for two years, he may purchase with the saving an allowance of £10 a year, to commence at the age of sixty-five years, and to be continued as long as he may thereafter happen to live. If he laid by threepence a day for five years, he could purchase with his savings, at the end of that time, an allowance of ten shillings a week, to commence at the age of sixty-five years. If a young man at eighteen begin to lay by threepence a day, and continue to do the same thing from year to year, he may at once purchase the certainty of being able to leave behind him a little fortune of £300 for his wife or children, or any other relatives who may be dear to and dependent upon him, whenever death puts an end to his earthly labours! Surely no rational and prudent man would ever think even 22,000 pints of profitless beer an equivalent for such a result of his industrious labour. It is by no means too strong an expression to speak of the beer as profitless, for this reason. A gallon of strong beer contains *a quarter of a pound* of nourish-

ment, bought at the cost of a couple of shillings. Two shillings would purchase about *three pounds* of excellent mutton or beef. The direct money-value of ardent spirits, swallowed every year by the inhabitants of the British isles, exceeds NINETY MILLIONS OF POUNDS sterling.

Although there may be question and doubt as to the character of the influence this fiery substance exerts, when poured out to the living human frame, through the supply-pipes, in moderate quantity, and weakened by mixture with a large proportion of water, all question and doubt disappear when *its action in greater strength and in large quantity* comes to be considered. An inquiring physician, Dr. Percy, once poured strong ardent spirit into the stomachs of some dogs, to see what would happen to them. The poor animals fell down insensible upon the ground directly, and within a few minutes their breathing had ceased, their hearts had stopped beating, and they were dead. Some of the dogs were opened immediately, and it was then found that their stomachs were quite empty. All the ardent spirit had been sucked out of them in a few short minutes. But where was it gone to? It was gone into the blood, and heart, and brain, and there it was discovered in abundance. It had destroyed life by its deadly power over those delicate inner parts.

Human beings are instantly killed when they swallow large quantities of strong ardent spirit, exactly in the same way as Dr. Percy's dogs. A few years ago two French soldiers made a bet as to who could drink the largest quantity of brandy. Each of them swallowed seven pints in a few minutes. Both dropped down insensible on the ground; one was dead before he could be picked up,—the other died while they were carrying him to the hospital.

A man in London soon after this undertook to drink a quart of gin, also for a wager. He won his bet, but never had an opportunity to receive his winnings. He fell down insensible, and was carried to the hospital, and was a dead body when he was taken in.

There can be no doubt, therefore, what strong ardent spirit, in large quantities, does for the living body. IT KILLS IN A MOMENT, as by a stroke. It is a virulent poison, as deadly as prussic acid, and more deadly than arsenic. Even when it is not taken in sufficient abundance to destroy in the most sudden way, it often leads to a slower death. Striking illustrations of this truth are presented continually in every corner of even this civilized land. It has been fully ascertained that not less than ONE THOUSAND PERSONS DIE FROM THE DIRECT INFLUENCE OF ARDENT SPIRIT, in the British isles, every year.

When people do not die directly upon swallowing large quantities of ardent spirit, it is because they take it so gradually that nature has the opportunity of WASHING THE GREATER PORTION OF IT AWAY through the waste-pipes, before any sufficient amount of it has gathered in delicate internal parts for the actual destruction of life. Nature has such a thorough dislike to ardent spirit in the interior of living bodies, that the instant it is introduced into their supply-pipes and chambers, she *goes hard to work to drive out* the unwelcome intruder. When men have been drinking much fermented liquor, the fumes of ardent spirit are kept pouring out through the waste-pipes that issue by the mouth, the skin, and the kidneys; the fumes can commonly be smelt under such circumstances in the breath.

When fermented liquors are drunk in a gradual way, but yet in such quantity that the ardent spirit collects more rapidly in the blood than it can be got

rid of through the waste-pipes, the fiery liquid produces step by step a series of remarkable effects, growing continually more grave, as more of the spirit flows in the channels of the body.

In order that all the actions of the living human body may be properly carried on, three *nerve-overseers* have been appointed to dwell constantly in the frame and look after different departments of its business. One of these has its residence in the brain; that nerve-overseer has charge of the REASON, and all that belongs to it. Another resides under the brain, just at the back of the face; that nerve-overseer looks after all that relates to FEELING or SENSE. The third lives in the *nerve-marrow* of the backbone; that has to see that the BREATHING and the PUMPING OF THE HEART go on steadily and constantly. Of these three superintendents the brain-overseer and the sense-overseer are allowed certain hours of repose at night; they are both permitted to take their naps at proper times, because the reason and the sense can alike be dispensed with for short intervals when the creature is put safely to bed, or otherwise out of harm's way. Not so, however, with the breathing and blood-pumping overseer. The breathing and the blood-movement require to be kept going constantly; they must never cease, even for a short interval, or the creature would die. Hence the nerve-marrow overseer is a WATCHMAN as well as an overseer. No sleep is allowed *him*. He must not even nap at his post. If he do, his neglect and delinquency are immediately discovered by a dreadful consequence. The breathing and blood-flowing, which are his charge, stop, and the living being, served by the breathing and the blood-streams, chokes and faints.

These three nerve-overseers have been fitted to perform their momentous tasks in the entire *absence*

of ardent spirit, and they are so constituted that they cannot perform those tasks when ardent spirit is *present in any great amount*. Ardent spirit puts them all to sleep. The *Reason-overseer* is overcome the most easily; he is the most given to napping by nature, so he goes to sleep first. If more spirit be then introduced into the blood, the *Sense-overseer* begins to dose also. And if yet more be introduced, the *Nerve-marrow* WATCHMAN ceases to be a watchman, and at length sleeps heavily with his companions.

Now, suppose that you, my firmly-knit reader, were in an unlucky moment of weakness to turn aside from your usual course of temperance and sobriety, and to drink fermented liquor until its fiery spirit gathered in your brain, and put your *Reason-overseer* to sleep, what think you would be the consequence? This would be the consequence—you would for the time cease to be a *reasonable being*. You would probably still walk about the streets, and go hither and thither, and do all sorts of things. But all this you would accomplish, not with a proper and rational knowledge of your actions. Your reason and understanding being fast asleep while you were walking about, you would properly be living in a sort of BRUTAL existence, instead of a *human and reasonable* one. You would have laid aside the guide who was intended to be your director in your responsible human life, and you would be rashly trusting yourself in a crowd of the most fearful dangers, all your responsibility still upon your shoulders, without the inestimable advantage of the advice and assistance of this experienced director. Like the brutes, you would then find yourself to be easily roused to the fiercest anger, and set upon the worst courses of mischief; you would find yourself readily filled with the most uncontrollable feelings of passion and vio-

lence, and liable to be run away with by them at any moment, and caused to do things that a rational creature could not contemplate without the deepest anguish and shame.

There is no lack of proof that human beings do the most brutish things when their reasons and understandings are put to sleep by strong drink, while their sense-overseers and their animal powers still remain active. Every place and every day afford such in wretched abundance. One impressive instance, however, may perhaps be related with advantage. On the night of the 28th of June, 1856, two drunken men, whose names were James and Andrew Bracken, rushed brawling out from a beer shop in one of the suburbs of Manchester. They ran against two inoffensive passengers, and in their blind and brutish rage began beating them; one was knocked down and kicked about the head when on the ground. He was picked up thence a few minutes afterwards and carried to the hospital, where it was found his skull had been broken. The poor fellow died in the course of the night.

In the next assize court, at Liverpool, James and Andrew Bracken stood in the dock to be tried for their brutal act. The counsel who defended them said that it was only a drunken row, and there was no murder in the case, because neither of them knew what he was doing. The judge and the jury, on the other hand, decided that this was no excuse, because they *ought* to have known what they were doing. They had laid aside their reason and become *brutal* by their own voluntary act, and were therefore responsible for any deed they might perform while in the brutal state. The jury returned a verdict of WILFUL MURDER against Andrew Bracken, and the judge passed sentence of death upon him, coupling the sentence

with these words, "You did an act, the ordinary consequences of which must have been to kill. It was a cruel and a brutal act, and you did it, wholly reckless of consequences. You have therefore very properly been convicted of wilful murder." The wretched man was removed from the dock shrieking for mercy, with upraised hands, and exclaiming, in heart-rending tones, "OH! MOTHER! MOTHER! THAT I SHOULD BE HANGED." No doubt he was very much surprised to find himself a condemned convict and A MURDERER, and had never intended to be so. He had no spite against his victim, and had probably never even exchanged a word with him. No drunkard therefore, when about to put his reason to sleep by intoxicating liquor, should ever overlook the fact, that he will for the time cease to have control over his actions, and that when that reason awakes, *he may find himself* like Andrew Bracken, A PRISONER AND A MURDERER. Whether he do so or not will depend on no will or determination of his own, but upon the mere series of accidents that will surround him while in his self-inflicted, helpless, and brutal state.

The case of Andrew Bracken, sad and striking as it is, by no means stands alone in the annals of crime. At the assize, held at Lancaster, in March, 1854, it was shown that in that single court 380 cases of grave crime had been detected and punished within a very short period, and that of the 380 cases TWO HUNDRED AND FIFTY, INCLUDING NINE MURDERS, were to be directly traced to the influence of drunkenness.

But if having ceased to be sober, my strong-bodied reader, you did not happen to commit murder, or do any other act of gross violence while in the *brutal stage* of drunkenness, yet nevertheless went on swallowing more and more of the intoxicating liquid

until your SENSE-OVERSEER was put to sleep as well as your REASON-OVERSEER, what do you think would chance to you then? Why, you would have ceased to be dangerous to your neighbours, and have become in a like degree dangerous to yourself. You would no longer have power to commit murder, or to do any other act of cruelty, because you would sink down on the ground a *senseless and motionless* lump of flesh. You would be what the world calls *dead-drunk*. But you would not in reality be *dead*, because the NERVE-MARROW WATCHMAN still continued at his post, and awake. The lump of prostrate flesh would still breathe heavily, and blood would be made to stream sluggishly from its beating heart. In this *insensible stage* of drunkenness, however, you would have ceased to be able to exercise any care over yourself. In it the drunkard is sunk as much lower than brutal life as the brutes are beneath reasoning life, inasmuch as he ceases to be able to exert the power which all brutes possess of perceiving the threatening of danger, and turning aside from its approach.

But yet again, rational reader, let us suppose that when you became for the time a lump of insensible flesh, you had already swallowed so much stupefying spirit, that there was enough to put the *nerve-marrow watchman* to sleep, as well as the *reason and sense-overseers*, before any fair quantity could be cleared away out of the waste-pipes of the body. Under such circumstances breathing would cease, and all heart-beating would stop. You would then indeed be DEAD-DRUNK in the full sense of the fearful term. Senseless drunkenness is dangerous to the drunkard himself, not only because he could not get out of the way if danger were to come where he is lying, but also because he *of necessity is placed in an insensible state upon the brink of a precipice*, from the depth

beneath which there could be no return if he once rolled over. Whether he will ever again awaken from his insensibility, or whether his earthly frame shall have already commenced its endless sleep, is a question which will be determined by the accident of a drop or two more, or a drop or two less, of the stupefying spirit having been mixed in with the coursing life-streams. The man who kills a fellow-creature in a fit of drunken violence, commits an act of murder; the man who dies in a fit of drunken insensibility, is guilty of self-slaughter. In its first degree, drunkenness is BRUTALITY; in its second degree, it is SENSELESS STUPIDITY, of a lower kind than brutes ever know; in its third degree, it is SUICIDAL DEATH. It will be felt that it is important this matter should be looked fairly in the face, and that there should be no reserve in the employment of words strong enough to characterize truly the fearful vice, when the statement is made that there are not less than seventy thousand *confirmed drunkards* known to be living at the present time in England and Wales.

It is now a well-proved and unquestionable fact, that a young man of fair strength and health, who takes to hard drinking at the age of 20, can only look forward to 15 *years* more of life; while a temperate young man, of the same age, may reasonably expect 45 *years* more! The habitual drunkard must therefore understand that, amongst other things, he has to *pay the heavy penalty of* 30 *of the best years* of existence, for the very questionable indulgence that he buys. The doctor also has a sad account to give of aches, and pains, and fevers, and weakness that have to be borne by the intemperate during the few years' life they can claim. Whatever may be the true state of the case with the *moderate use* of fermented liquors, their *intemperate use* is a fertile source whence

men draw disease and suffering. INTEMPERANCE IS ANOTHER OF THE INFLUENCES WHEREBY MEN CAUSE SICKNESS AND DECAY TO TAKE THE PLACE OF HEALTH AND STRENGTH. The doctor has likewise, it must be remarked, a tale of his own to tell concerning the beneficial power of fermented liquors, when employed as medicines in certain weakened and already diseased states of the body.

There is one earnest word which has yet to be addressed to those who have *satisfied their consciences* that they may with propriety indulge their inclination to use fermented liquors in moderation habitually. Have they also satisfied themselves that they can *keep to the moderation* their consciences allow? Have they taken fairly and sufficiently into consideration their own powers to resist urgent allurements? Have they well weighed the possible influence, in their own case, of the enticements, which agreeable flavours and pleasurable exhilaration, necessarily bring into operation? Have they sufficiently pondered upon the admitted truth that there scarcely ever yet was a confirmed drunkard who did not begin his vicious career by a very moderate employment of the seductive liquors? If they have done this, then let them still nevertheless go one step further and carefully determine also for their own case, *what moderation is*, and while doing this, let them never forget that when the thirsty man drinks *a pint of table-beer*, he pours a TEASPOONFUL OF ARDENT SPIRIT into his blood; when he drinks *a pint of strong ale*, he pours TWO TABLESPOONFULS OF ARDENT SPIRIT into his blood; when he drinks *four glasses of strong wine*, he pours ONE GLASS OF ARDENT SPIRIT into his blood; and when he drinks *two glasses of rum, brandy, or gin*, he pours from THREE-QUARTERS OF A GLASS, TO A GLASS, OF ARDENT SPIRIT, into the channels of his supply-pipes.

The habitual drinker of port wine has a more or less strong fancy that his favourite and so called "generous" beverage fills him with "spirit" and "fire." This fancy is indeed not without some ground. Government has recently caused a very careful investigation to be made of the strength of the port wines that are furnished to the English markets, and the investigation has disclosed the startling and unexpected fact, that the weakest of these wines contain 26 per cent.; ordinary specimens of them from 30 to 36 per cent.; *choice* specimens 40 per cent.; and what are called the *finest* wines as much as 56 per cent. of proof ardent spirit. The port wine drinker therefore actually receives even more "spirit" and "fire" with his ruby drink than he is himself aware he has bargained for. There are rich flavour and delicious odour, no doubt, in his wine, and so much the greater is his danger. These serve only to conceal a wily enemy who is lurking beneath. A *bottle of ruby port wine in the stomach* commonly means HALF A BOTTLE OF POISONOUS FIERY SPIRIT IN THE BLOOD, AND HEART, AND BRAIN.

FINIS.



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